

1970

# TEXTILE MUSEUM JOURNAL

Eastern Hemisphere  
Curatorial Office,



Volume III - Number 1  
DECEMBER 1970

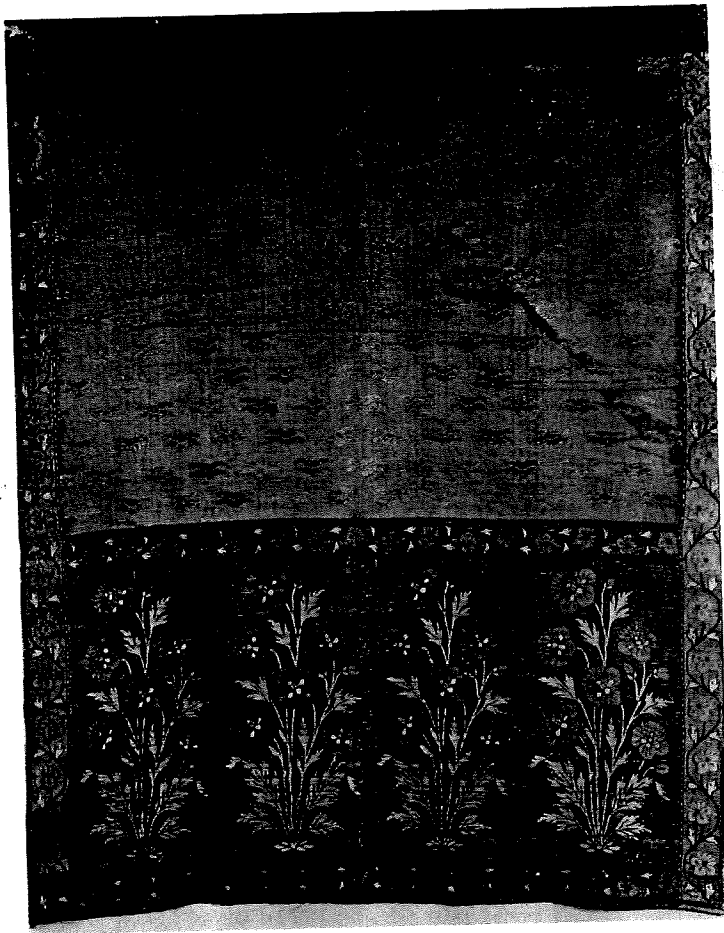
# CONTENTS

LENTEN CURTAINS FROM COLONIAL PERU. <i>Pál Kelemen</i>	5
PERUVIAN TEXTILE FRAGMENT FROM THE BEGINNING OF THE MIDDLE HORIZON. <i>William J Conklin</i>	15
SYMBOLIC SCENES IN JAVANESE BATIK. <i>Monni Adams</i>	25
INDONESIAN TEXTILES AT THE TEXTILE MUSEUM. <i>Monni Adams</i>	41
A TYPE OF MUGHAL SASH. <i>Milton Sondag and Nobuko Kajitani</i>	45
PRINCIPLES OF TEXTILE CONSERVATION SCIENCE <i>by James W. Rice:</i>	55
NO. XIII ACIDS AND ACID SALTS FOR TEXTILE CONSERVATION	
NO. XIV THE ALKALIES AND ALKALINE SALTS	
NO. XV THE CONTROL OF OXIDATION IN THE TEXTILE CON- SERVATION	
NO. XVI THE USE AND CONTROL OF REDUCING AGENTS AND "STRIPPERS"	
TEXTILE MUSEUM NOTES	69
BOARD OF TRUSTEES AND STAFF	72

COVER: Detail of the early Middle Horizon tapestry fragment in William J Conklin's article "Peruvian Textile Fragment from the Beginning of the Middle Horizon". Photograph by Allen C. Marceron.

DRAWINGS by: William J Conklin for "Peruvian Textile Fragment from the Beginning of the Middle Horizon"; Sally Huddles for "Symbolic Scenes in Javanese Batik"; Milton Sondag for "A Type of Mughal Sash".

PHOTOGRAPHS of Textile Museum's illustrations are by Allen C. Marceron and Osmund L. Varela. All other photographs are courtesy of American Museum of Natural History, The Brooklyn Museum, William J Conklin, Kelemen Archive, Elisabeth Z. Kelemen, Los Angeles County Museum of Art, The Metropolitan Museum of Art, and Taylor & Dull.



*Fig. 1 Detail of Textile Museum sash 6.29. Length, end to end: 375 cm. (12' 4 1/4"). Width, selvedge to selvedge: 51.5 cm. (1' 8 1/4"). Four plants in dark green, yellow-green, two reds, and ivory on a gold background within a horizontal panel at each end; floral vine borders; red field with alternating rows of pairs of small wavy bars; yellow warp stripe the entire width of each vertical side border.*

## A TYPE OF MUGHAL SASH

MILTON SONDAY AND NOBUKO KAJITANI

The Textile Museum has in its collection a Mughal "sash" (Figure 1) which has presented the authors with an unusual challenge: It is related to six in the Los Angeles County Museum of Art<sup>1</sup> by common features including extremes of length and width, woven structures, patterning techniques, finishing details, and probable use. The patterned areas are laid-out according to a common plan. At each end of the very long fabrics with a narrow border along each side is a horizontal panel containing a row of either six or four plants bordered with a narrow band at top and bottom. A field with a continuous or allover pattern fills the expanse between the two horizontal panels. Each fabric at a glance can be seen to have two contrasting surfaces: one for the horizontal panels and all borders, and another for the long narrow field. It is the juxtaposition of these two surfaces along with

the structures and patterning techniques of each fabric which form the basis for the following discussion.

Each of the seven fabrics can be divided, for the purpose of our discussion, into three sections: A, B, and C, Figure 2. The layout of the patterns, the structures, and the materials in the three respective major areas of each fabric can be illustrated as follows: section A designates the heading and finish bands woven with a continuous cotton weft; B designates the floral patterned panels and borders, all on a metal background and woven with both continuous and discontinuous silk and metal-wrapped silk wefts; C designates the field patterned by either a supplementary discontinuous metal-wrapped silk in a twill foundation woven with a discontinuous cotton weft, or a damask woven with a discontinuous cotton weft. Figure 3 is a diagram of

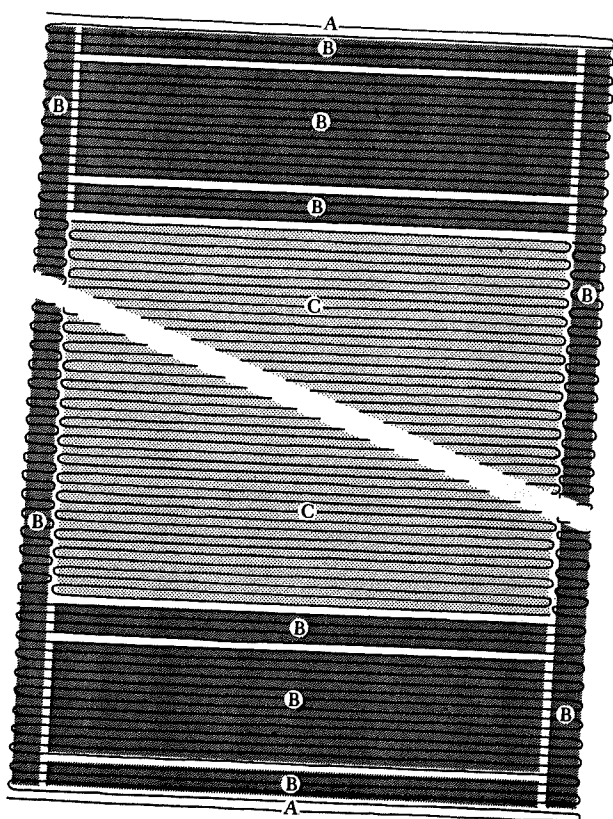


Fig. 2 Layout of the sashes. A: heading and finish. B: horizontal end panels and bands and vertical side borders. C: field.

the structures in one of the fabrics, T.M. 6.29 (Figure 1). Each structure will be analyzed in the following discussion.

Both ends of T.M. 6.29 have been cut not, however, where the fabric is patterned, but slightly beyond in what is generally called the heading or, at the opposite end, the finish. Here a narrow band of predominately warp-faced plain weave, Section A, Figure 3, remains (there is a higher number of warps than wefts per unit of measure).

Section B is a diagram of the structures of the horizontal panels and all borders. At first glance several distinguishing features can be observed: the entire front surface of these areas is a 3/1 twill, while corresponding areas on the back show not the back of that twill but either plain weave or a mass of free-floating wefts (Figures 4 and 5). How these structures are related can be explained as follows:

Beyond the band of plain weave the warps divide—alternate warps go to the front and the rest to the back. On the front the set of warps is interlaced by a set of wefts in weft-faced 3/1 twill, and on the back the other set of warps is interlaced by another set of wefts in plain weave (Figure 3, section B-1). Beginning at this point the two structures form separable layers of fabric.

In section B-2 there is an area of section B-1—the warps continue on two levels and are interlaced by their respective wefts. In a contrasting area, however, the warps are also on two levels; but there is an interchange of wefts. The wefts on the front interchange with the wefts on the back and vice versa. The 3/1 twill interlacing is maintained on the front layer, but the interchanged wefts on the back are not interlaced in plain weave to form the second layer. Instead, they are floating free behind the warps on the back<sup>2</sup> (cut away on the diagram). The two structures at this point form separable layers of fabric interrelated by an interchange of wefts.

Section B-3 is essentially the same as B-2. However, the plain-weave wefts on the back are paired so that when one of the pair interchanges with the twill weft on the front, the second of the pair maintains the plain weave interlacing on the back. One weft is constantly substituting for the other, a sort of sharing of function. When one weft can be described as a substitution for another, and if both "... have the same direction in a fabric and are co-equal in the fabric structure, they can be described as being *complementary* to each other. ..."<sup>3</sup> In this fabric structure both wefts of the pair are continuous from selvedge to selvedge, patterning only in the narrow horizontal bands and adjacent sections of the vertical side borders. The interchanged wefts are floating free behind the plain weave. In this section, then, the two structures form separable layers of fabric interrelated by an interchange of wefts, the plain weave compounded by a complementary set of wefts.

In section B-4 there is again an area of section B-1, the warps continue on two levels and are interlaced by their respective wefts. However, a third weft is introduced, interlacing only with the twill warps on the front. On close inspection you will note that this weft is a substitution for the original twill weft. Again, these wefts can be described as being complementary to each other but, in this fabric structure, one weft is continuous and its complement is discontinuous. When this third discontinuous weft is introduced, it interlaces in 3/1 twill in place of the original weft which is sent to the back where it is free-floating. All the while the plain weave remains intact underneath the twill, but is covered on the back by the free floats including those of the discontinuous substitution wefts. At this point the two structures again form separable layers of fabric, the twill compounded by a discontinuous complementary weft.

It should be noted that any number of discontinuous wefts can substitute singly to form pattern on the face and when not in use to be free-floating on the back. This accounts for the additional floats of various colors on the back. (Figures 4 and 5)

Sections B-1, B-2, B-3, and B-4 in Figure 3 can be used side by side. This juxtaposition forms the pattern in the horizontal panels and all borders, (Figure 2, section B). B-1 is used for the gold background of the two horizontal end panels, the

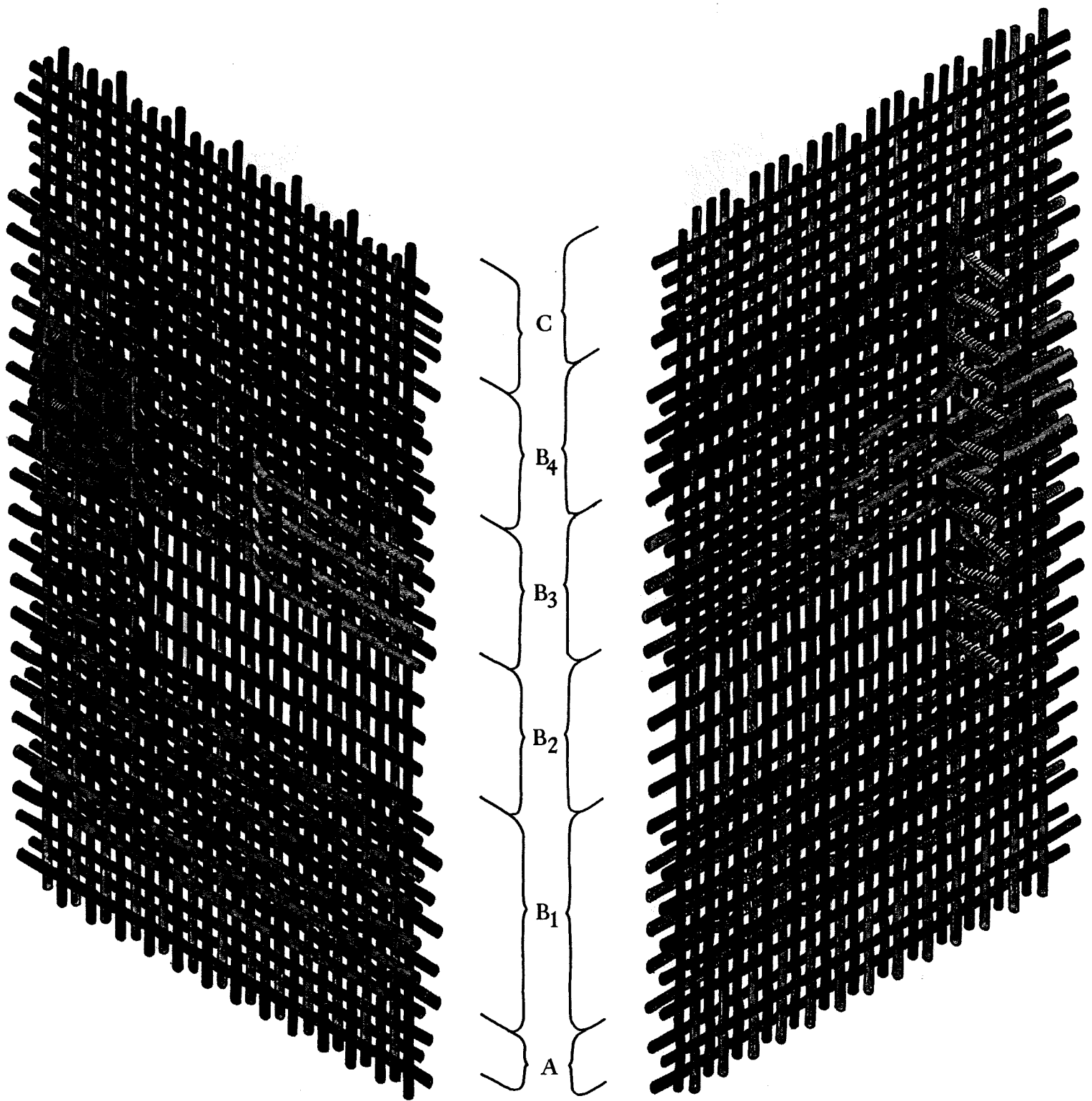


Fig. 3 Diagram of the structure in T.M. 6.29, Figure 1. Front (left) and back (right). A: heading and finish. B: horizontal end panels and bands and vertical side borders. C: field.

horizontal bands, and the vertical side borders; B-2 for the dark stems and leaf outlines in the plants in the horizontal end panels and vertical side borders; B-3 for the dark vine and leaf outlines and for the dark red of the blossoms in the narrow bands at the top and bottom of the panels; and B-4

for all the other colors: two reds and ivory for the blossoms and yellow-green for the leaves in the horizontal end panels, medium red for the blossoms and yellow-green for leaves in the bands, and two reds for the blossoms and yellow-green for leaves in the vertical side borders.

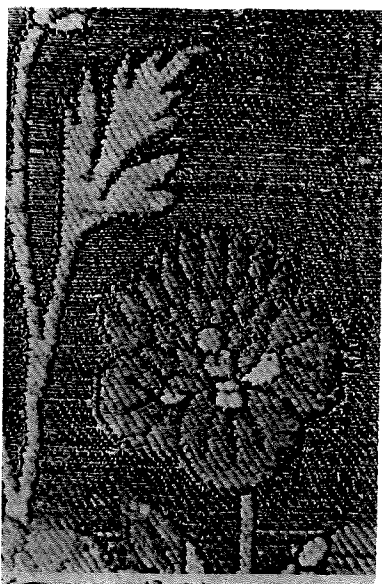


Fig. 4 Detail of the flowering plants in a horizontal panel of T.M. 6.29 showing the twill fabric on the front.



Fig. 5 The back of the area in Figure 4 showing the plain weave fabric and free-floating wefts.

Section C of Figure 3 corresponds to the field. Upon the completion of the top band of the horizontal panel at one end and the corresponding side borders, the warps form one layer and are interlaced by a set of wefts in 3/1 irregular twill, the warp face of which is on the front. This warp-faced twill foundation is patterned by discontinuous supplementary wefts (brocading) <sup>4</sup> floating either on the front or back as required by the pattern. (The supplementary wefts are not shown in section C, Figure 3.) This is the structure of the entire field.

The fabric is a loomed width on continuous warps, the weaving having been begun at one end and continued until the desired length was reached. The weaving began with plain weave. (Figure 3, section A) The patterned areas began with the bottom horizontal band and the two narrow vertical side borders and continued until the horizontal panel, the top horizontal band and corresponding vertical side borders were completed. The structures as in section B of Figure 3 were used and all wefts (with the exception of those in section B-4 already described as being discontinuous complementary) are continuous. That is, the twill weft on the front and the plain weave weft on the back extend from selvedge to selvedge. However, when the field is begun, the one set of wefts interlaces only to the edges of the field, while the two sets of weft continuing the side borders interlace only within the width of each border. In order to join the independent structures of the field and the borders, both the twill wefts and the plain weave wefts in each vertical side border dovetail with corresponding wefts of the field. In this way the vertical side borders and the field continue to be woven until the horizontal panel at the opposite end is to be begun. At this point all the warps are again on two layers with the twill and plain weave wefts continu-

ous from selvedge to selvedge to complete the panels and borders. The fabric is completed as it was begun with a band of plain weave—the finish. It should be noted that the pattern of the field reverses direction at a point 5'5" from one end of the fabric, 6'11 $\frac{1}{4}$ " from the other.

A summary of the structures and patterning techniques of this fabric is now in order. What we have is a simple structure and compound structures. A simple structure is one with two sets of elements: one set of warps and one set of wefts. A compound structure is one with three or more sets of elements: one set of warps, one set of wefts, and one or more additional sets of either warp, weft, or both, continuous or discontinuous.

The simple structure found in this fabric as heading and finish is plain weave. The compound structure found in the field is a warp-faced 3/1 irregular twill with discontinuous supplementary weft floats. The second compound structure, the distinguishing structure of this fabric, can be most simply described as a combination of two structures with four sets of elements (two sets of warps and two sets of wefts): 3/1 twill and plain weave. The two structures are interrelated by an interchange of wefts. The 3/1 twill is compounded by sets of discontinuous complementary wefts and the plain weave is compounded by the addition of complementary wefts. There is no single term which in any way describes this compound structure.

The major patterning techniques are related to the use of the compound structure: *combination of two structures with four sets of elements: 3/1 twill and plain weave*. The interchange of wefts from one structure to another is a way of interrelating the two as well as a way of patterning, particularly if there is a contrast in the color, material, or make-up to the two wefts. The metal-wrapped silk,

effectively used for pattern background, interchanges with a dark silk with no visible twist, resulting in a dark fabric skillfully limited to linear elements in the pattern. The interchange is dramatized by the contrast in the color and material of the two wefts. Weft substitution is in itself a patterning technique. In this way the yellow-green was added to the leaves and the two shades of red and the ivory to the blossoms of the plants in the horizontal panels. The other patterning technique—discontinuous supplementary weft (brocading)<sup>4</sup>—we have already mentioned.

It should be noted that the twill referred to in the foregoing discussion, the 3/1 twill, is a two-faced structure, the warps floating on one face the wefts on the other. The use of the weft face of the 3/1 twill in the areas patterned as in section B emphasizes the action of the wefts in interchange and substitution, and the use of the warp face of the 3/1 irregular twill in the foundation fabric of the field contrasts with the floats of the discontinuous supplementary wefts.

As noted in the introduction, one of the features of the layout is the narrow vertical side borders which do not butt into the panel at each end, but continue along each side the full length of the fabric. The warps of these vertical side borders are a different color which modifies the colors of the weft—even on the weft face of the 3/1 twill—and emphasizes the continuity of each vertical border. The effect on the continuous metal-wrapped weft is particularly noticeable: a red warp produces a reddish gold and a yellow warp a yellowish gold.

The following are also common to all: all the fabrics have the distinguishing structure in the panels and borders as we have already described. The corresponding discontinuous wefts of the field and the side borders dovetail. The silk warp is slightly twisted Z or S, with no particular difference in the number of warps per unit of measure. Each selvedge is reinforced by a single stout natural cotton cord—a combination of various spins and plies, the final ply being Z. The wefts of the plain weave heading and finish, as well as the discontinuous foundation wefts of the field, are a doubled or tripled Z-spun dyed cotton. The metal wefts are narrow strips of foil, either silver or gilded silver, wound in the Z direction onto a silk yarn but not completely covering it. All other wefts are silk with no visible twist.

The following differences between the seven fabrics must be noted: the direction of the twill in section B in Figure 2 in all the fabrics, except T.M. 6.29 is /. The field of L.69.24.173 (Figure 6) in the Los Angeles County Museum is patterned by a 3/1 twill damask.<sup>5</sup> The foundation fabrics in the fields of L.69.24.137, 236, 41 (Figure 7), 335 and 260 (Figure 8) are a regular 3/1 twill with the warp face on the front. The colors and number of substitution wefts vary. The colors of the warp stripes vary, L.69.24.137 having two. The warps in the heading and finish bands in L.69.24.137 and 236 are paired.

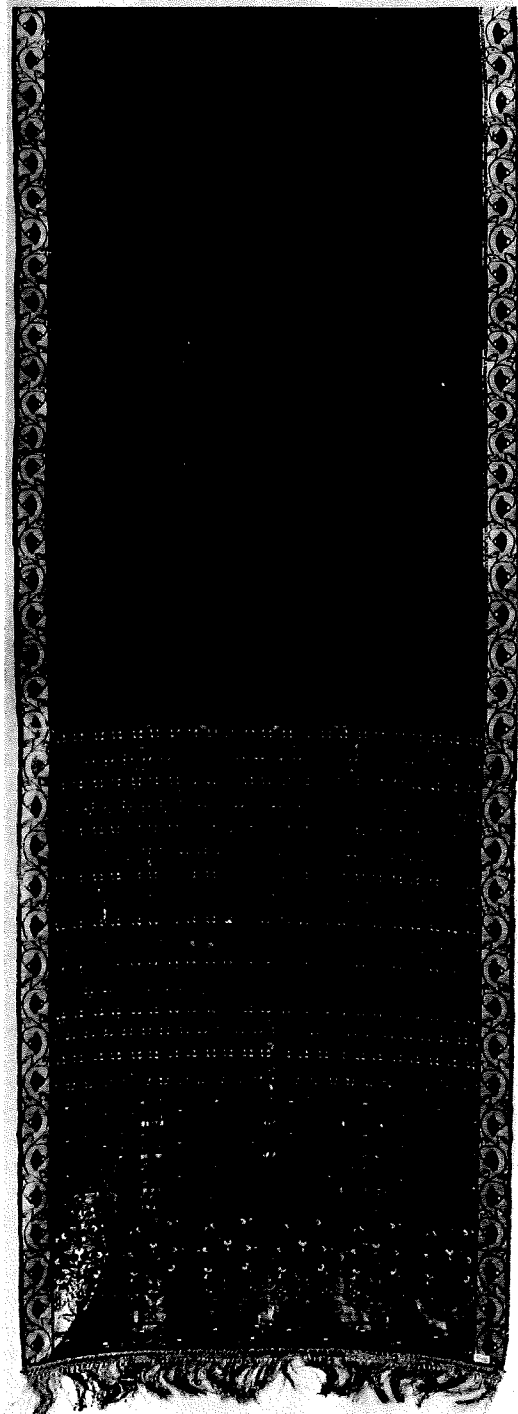
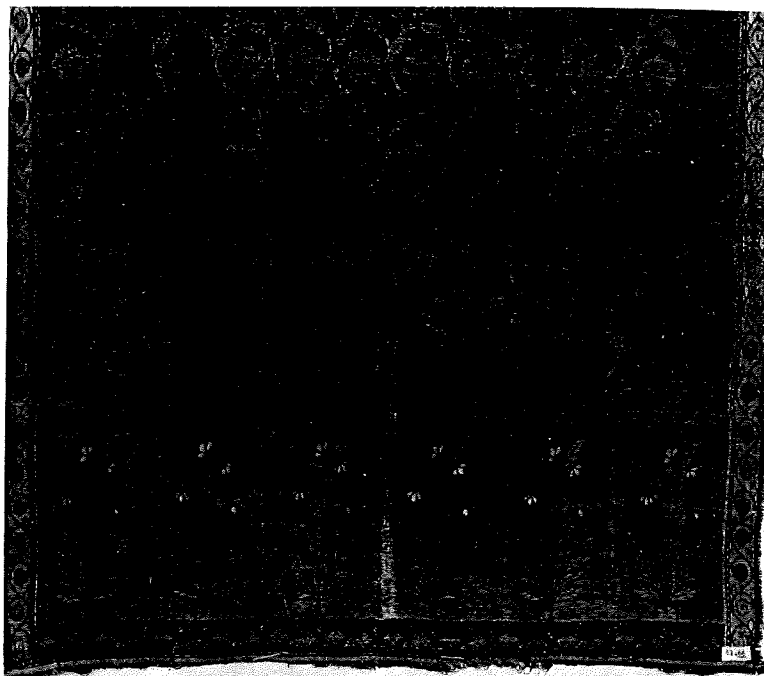


Fig. 6 Detail of a sash in the Los Angeles County Museum of Art, L.69.24.173. For description see Note 1.

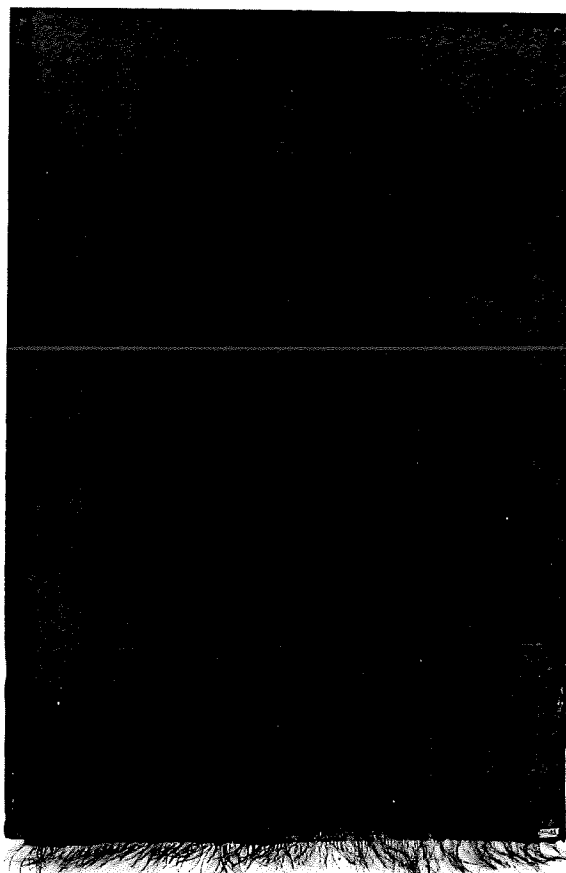
Fig. 7 Detail of a sash in the Los Angeles County Museum of Art, L.69.24.41. For description see Note 1.

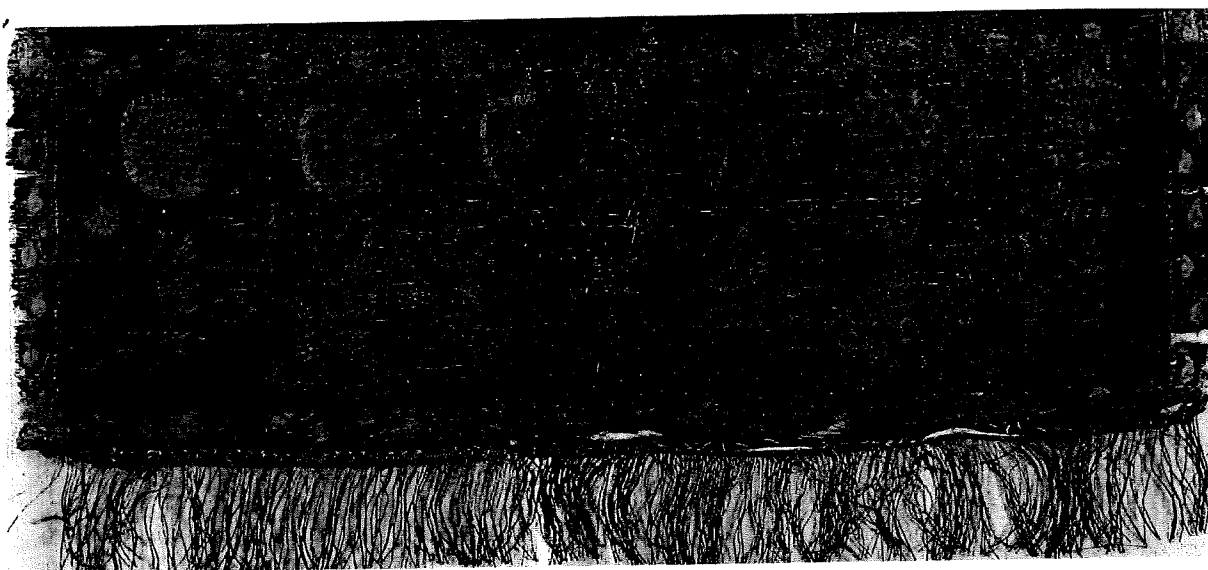


A fragment in the Textile Museum (6.30, Figure 9) also belongs to this group, but has more areas patterned as in section B-3 of Figure 3 than any of the other fabrics. There is a set of two complementary wefts in the plain weave fabric on the back patterning the lower half of the horizontal panel, one weft for the dark blue-green stems and leaf outlines and the other for the yellow-green in the leaves. Another set of three complementary wefts patterns the horizontal bands at the top and bottom of the panel, plus additional ones beyond the top band. These complementary sets of two or three wefts reduce the number of discontinuous substitution wefts and are continuous from selvedge to selvedge patterning adjacent sections of the vertical side borders. This fragment is related to a fragment, possibly the border of a sari, in the Metropolitan Museum of Art, 28.50, Figure 10. The three narrow horizontal bands are patterned by a set of two complementary wefts in the plain weave fabric on the back as well as by discontinuous substitution wefts. The increased use of sets of complementary wefts in both may place them in a technical sub-group within the one we have been discussing.

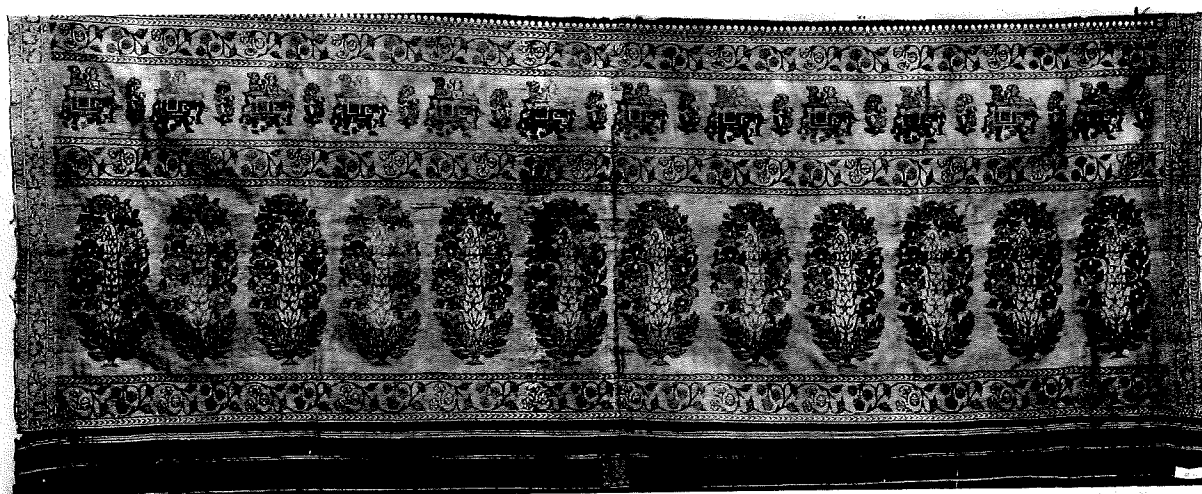
Both ends of the seven fabrics, and the end of the Textile Museum fragment T.M. 6.30, have been cut in the heading or finish area leaving a narrow band of plain weave which has been turned up, hemmed, and covered by a length of metal fringe sewn on. T.M. 6.29 seems to have lost its fringe at both ends and L.69.24.335 at one end. The fringe is actually a series of long weft loops of metal-wrapped silk in a narrow band of countered warp-twining.

Fig. 8 Detail of a sash in the Los Angeles County Museum of Art, L.69.24.260. For description see Note 1.





**Fig. 9** One end of a sash, Textile Museum sash 6.30. Width, selvedge to selvedge: 50 cm. (1' 7 $\frac{3}{4}$ "). Six plant motifs in blue-green, yellow-green, and two reds on a gold background within a horizontal panel; originally at least two additional bands at top of horizontal panel; floral vine borders; field is missing; yellow warp stripe the entire width of each vertical side border. One length of gold fringe sewn to the end.



**Fig. 10** One end of what was probably a sari. Metropolitan Museum of Art, New York, Rogers Fund, 1928. (28.50) Width, selvedge to selvedge: 104 cm. (3' 6"). Twelve plants in yellow-green, dark blue, red, pink, yellow, blue, orange, and purple on a gold background within a horizontal panel; floral vine borders; two figures riding an elephant alternating with a flowering plant (twelve each) in the same colors on a gold background in an upper panel.

There is evidence of the seven fabrics plus the Textile Museum fragment having been starched and glazed as a finish. The surfaces still retain a gloss and the fabrics under a microscope appear to have been subjected to considerable pressure. The starch would have added a stiffness to the sash and the glaze would have increased the luster of the metallic and polychrome silk surfaces.

The probability that these fabrics were used as sashes<sup>6</sup> is reinforced by the following. There is a difference in the weight of the fabric of the field and the fabric of the end panels by nature of the structures used and the amounts of metal in each. The lighter fabric of the field allows for increased flexibility in folding and tying, while the heavier fabric of the horizontal panels adds weight to the

two hanging ends. The plant motifs which decorate the horizontal panels can be said to be in their natural growth position only when seen from each end—a position which would result from a tie with two hanging ends. Also, the fold, instead of cutting a motif, would have divided six into two groups of three; and four into two groups of two. The fringe, of course, adds the appropriate finish plus added weight.

It has been said that fabrics of this type were used as sashes wrapped and tied around the waist. Indeed, all are long and narrow. The widths of the fabrics hardly vary, the average being about 19½". The lengths, on the other hand, vary greatly, the shortest being 7'8⅞" and the longest 12'8½". Observe that each fabric was folded in half along the length thereby reducing the average width as worn to about 9¾". A sash of any length folded in half lengthwise, wrapped once around a waist of indeterminate size, and tied overhand (with or without a loop) leaving two ends hanging, seems to be a standard article of Mughal dress as shown in miniatures: (Figure 11) It is conceivable that sashes were woven to conform to a standard width but the length to no such standard except as set possibly by fashion, social position, or national origin.

Everything about these fabrics: the placement of pattern areas, the use of a structure in a specific area, the juxtaposition of a light and a heavier weight fabric, the contrast of surfaces, the patterns

themselves, the skillful use of colors, contributes to their intended use—a sash to attest the magnificence and worth of the wearer. This affirms the artistry of the designer and the skill of the weaver.

For the moment, let us accept that these sashes were used and possibly manufactured in India sometime in the Mughal period. Jahangir in his memoirs<sup>7</sup> constantly mentions the robes and other items of dress he presented as gifts of honor to generals, statesmen and members of his family. In the 12th year of his reign (in about 1617) he claims to have invented a dress:

"... Having adopted for myself certain special cloths and cloth-stuffs, I gave an order that no one should wear the same but he on whom I might bestow them. One was a *nādirī* coat that they wear over the *qabā* (a kind of outer vest). Its length is from the waist down to below the thighs, and it has no sleeves. It is fastened in front with buttons, and the people of Persia call it *kurdī* (from the country of the Kurds). I gave it the name of *nadiri*. Another garment is a *Tūs* shawl, which my revered father had adopted as a dress. The next was a coat (*qaba*) with a folded collar (*batū giribān*). The ends of the sleeves were embroidered. He had also appropriated this to himself. Another was a *qaba* with a border, from which the fringes of cloth were cut off and sewn round the skirt and collar and the ends of the sleeve. Another was a *qaba* of Gujarati satin, and another a *chīra* and waistbelt woven with

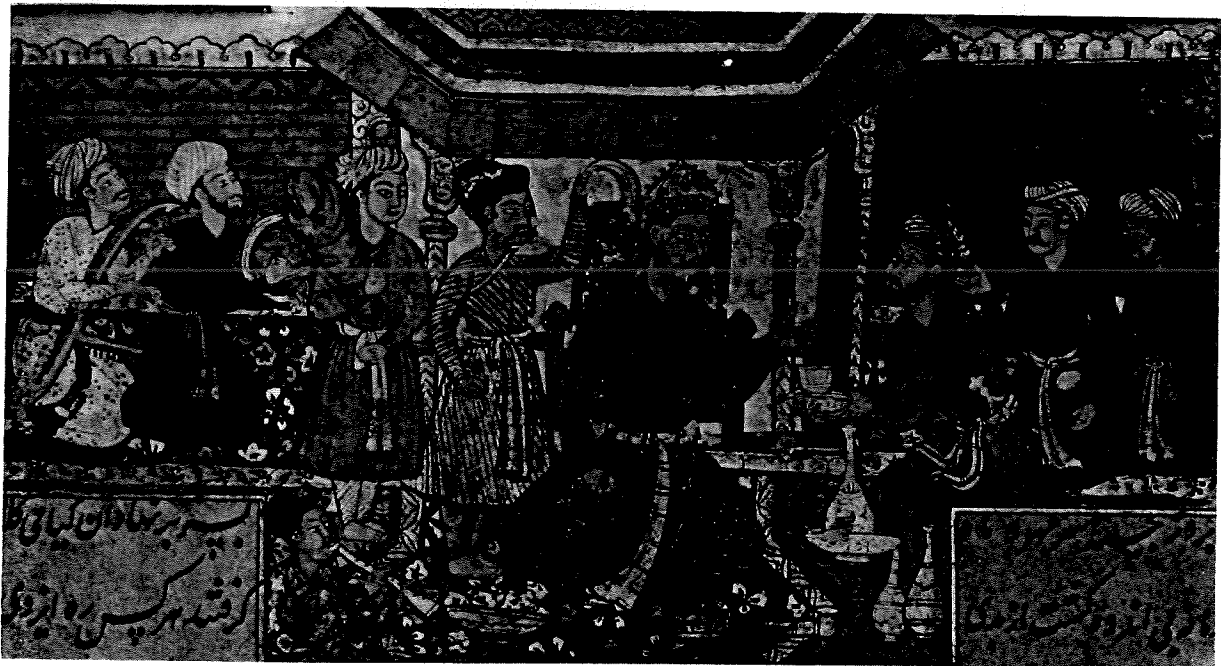


Fig. 11 *Faridun Enthroned (?)* Detail of a miniature in the manuscript of the *Shah-namah* by Firdausi, dated 1602. Metropolitan Museum of Art, New York. Gift of Alexander Smith Cochran, 1913. (13.228.22) The central figure and two to the right wear sashes simply tied with two hanging ends. Three figures on the left wear their sashes tied with a loop. Note that both ends of the sashes are patterned.

silk, in which were interwoven gold and silver threads."

In about 1621 (in the 16th year of his reign), he states:

"... I presented my son Shahriyār with a jewelled *chārqaḥ* (coat), with a turban and waistbelt (*kamar-band*), and two horses, one an Irāqī, with a gold saddle, and the other a Turkī, with an embroidered saddle."<sup>8</sup>

And, in about 1615 (in the 10th year of his reign), he says:

"... On the 5th of the month ten turbans (*chīra*), ten coats (*qabā*), and ten waist-bands were given to Karon..."<sup>9</sup>



Fig. 12 Portrait of Aurangzeb (ruled from 1658-1707). Metropolitan Museum of Art, New York, Bequest of George D. Pratt, 1945. (45.174.28) Plants with purple blossoms and small red and pink clouds on a gold background within panels at each end of the sash. Green bands decorate the gold field.

These random quotes are meant to establish the sash as a status symbol and increase our curiosity about what fabrics were used by the court and manufactured in Mughal India and what the style of the sash was from decade to decade.

The common feature of all the sashes is the two free hanging ends with pattern concentrated at each end. In a brief survey of miniatures of the Mughal period, one cannot help but notice that the sashes worn during the period of Jahangir (who ruled from 1605 to 1627) seem to have been patterned with motifs in geometric arrangement. Those patterned with growing flowering plants in naturalistic arrangement seem to appear during the reign of Shah Jahan<sup>10</sup> (1627 to 1658) and most often during the reign of Aurangzeb (1658 to 1707) (Figure 12). Though by no means conclusive, this suggestion seems to date this latter style to no earlier than the second half of the 17th century or in a style begun by Shah Jahan and popularized by Aurangzeb.

Obviously more work needs to be done on the styles and patterns of the Mughal Indian sash. All of them need not have been patterned by a complex loom mechanism. Were some printed, painted, or embroidered? What influence did the Mughal sash have on those of other countries? What were the traditions of the Persian sash and what styles were contemporary with the Mughal period? What were the traditions of the sash in the ancient Near East and how did they develop into the sashes we have been discussing?

We have often remarked that a structure or weaving technique is less subject to change than motifs and patterns. The former may survive wars and changes of dynasty whereas the latter may change suddenly according to personal whim. The structure—combination of two structures with four sets of elements: 3/1 twill and plain weave—may be one of long duration. Are there fabrics having this structure earlier than these sashes for which, as we have explained, it is so well suited? On the basis of the colors and drawing of the motifs of one of the sashes in the Heeramanek Collection in the Los Angeles County Museum of Art (L.69.24.173, Figure 6) and the end of what was probably a sari in the Metropolitan Museum of Art (Figure 10), we would extend the use of this structure into the 19th century.

The attribution of India as the country of manufacture at this moment seems quite possible. Statements to this effect have been made generally on the basis of pattern and vary from scholar to scholar. Persia as an alternative attribution raises the question as to who was weaving what and where and at what time. To date, not enough research has been done on the structures and patterns of woven fabrics (not necessarily sashes) attributed to either country to be able to confirm areas of manufacture. We have begun to note a variety of fabrics each with a twill face patterned by several colors including large amounts of metal—this group of sashes being but one of the types. It

is our hope that this discussion will at least establish a group which in time might be contrasted with an analysis of the structures of another group. Only in this way will we arrive at a sensible conclusion. In the meantime, we would appreciate knowing of fabrics attributed to either Persia or India

which might be included in future discussions.

Concerning these sashes, we can say—be they short, extra long, plain or splendid, woven or painted, tied or untied—they seem to have been worn proudly by Shahs, herdsman, civil servants, as well as by ladies of the harem.

## NOTES

<sup>1</sup> We wish to thank Mrs. Mary Kahlenberg, Curator of Costumes and Textiles, for providing us with an opportunity to study the following sashes in the Heeramanek Collection in the Los Angeles County Museum of Art (Mrs. Kahlenberg's discussion of Mughal sashes is soon to be published as part of the proceedings of the October 1970 Los Angeles County Museum Seminar on Indian Art):

L.69.24.137—Length, end to end: 254 cm (8'4 $\frac{3}{8}$ " ). Width, selvedge to selvedge: 49 cm (1'7 $\frac{1}{4}$ " ). Six identical plant motifs in silver, yellow-green and deep blue on a gold. Yellow-green warp stripe the width of each vertical floral vine borders; red field with 30 floral vine stripes in side border and a light yellow warp stripe for the guard stripes of each. Two lengths of gold fringe sewn to each end.

L.69.24.236—Length, end to end: 235 cm (7'8 $\frac{7}{8}$ " ). Width, selvedge to selvedge: 51 cm (1'8 $\frac{3}{8}$ " ). Six identical plant motifs in green, red, medium red, cream, and dark blue on a gold background within horizontal panels at each end; floral vine borders; red field with allover dotted pattern in gold. Yellow warp stripe the entire width of each vertical side border. One length of gold fringe sewn to each end.

L.69.24.41 (Figure 7)—Length, end to end: 240 cm (7'10 $\frac{7}{8}$ " ). Width, selvedge to selvedge: 48.5 cm (1'7 $\frac{1}{8}$ " ). Six identical plant motifs in green, red, medium red, light yellow, and dark blue on a gold background within horizontal panels at each end; floral vine borders; red field with 12 continuous curving floral vine stripes in gold. Yellow warp stripe the entire width of each vertical side border. One length of gold fringe sewn to each end.

L.69.24.335—Length, end to end: 367 cm (12'1" ). Width, selvedge to selvedge: 49 cm (1'7 $\frac{3}{8}$ " ). Four identical plant motifs in red, medium red, yellow-green, yellow and dark blue on a gold background within horizontal panels at each end; floral vine borders; red field with allover pattern of offset rows of small squares in gold. Yellow warp stripe the entire width of each vertical side border. One length of gold fringe sewn to one end.

L.69.24.260 (Figure 8)—Length, end to end: 244.5 cm (8'5 $\frac{5}{8}$ " ). Width, selvedge to selvedge: 49.5 cm (1'7 $\frac{5}{8}$ " ). Six identical plant motifs in red, medium red, yellow-green, silver, and blue-green on a gold background within horizontal panels at each end; floral vine borders; yellow-green field with an allover diamond lattice enclosing small

blossoms in silver (?). One length of gold fringe sewn to each end.

L.69.24.173 (Figure 6)—Length, end to end: 386 cm (12'8 $\frac{1}{2}$ " ). Width, selvedge to selvedge: 51.5 cm (1'8 $\frac{3}{8}$ " ). Six identical plant motifs in maroon, orange, cream, light green, and blue on a gold background within horizontal panels at each end; floral vine borders with an additional two at top of each panel; second panel with allover pattern of small blossoms or leaves in 16 offset rows on a gold background; blue-green field with twill damask pattern of small diamonds in offset rows. Yellow warp stripe the entire width of each vertical side border. One length of knotted gold fringe sewn to one end.

<sup>2</sup> Even though the warps on the back are not interlaced with the wefts interchanged and on the back, these two sets of elements, in the terms of this discussion, can be thought of as a structure since the possibility for a structure exists.

<sup>3</sup> Emery, Irene, *The Primary Structures of Fabrics*. The Textile Museum, Washington, D. C., 1966, p. 150.

<sup>4</sup> "Brocading" and "brocaded" are forms of the verb to brocade and refer to the use of discontinuous wefts in compound structures. In this study it can be used to describe the discontinuous complementary wefts and the discontinuous supplementary wefts.

<sup>5</sup> Damask is a patterning technique which relies on the juxtaposition of the two faces of a two-faced simple structure, such as 3/1 twill, 5-harness satin, etc.

<sup>6</sup> Fabrics of this type have also been called girdles, waistbands, kambarbands, or patkas. We have chosen the word sash which today has a more general connotation. For a discussion of the word *sash*, see: Irwin, John, "A Note on the Indian Sashes of King Gustavus Adolphus", *Journal of Indian Textile History*, number IV, Ahmedabad, 1959, p. 69.

<sup>7</sup> Jahangir, *The Memoirs of Jahangir*, translated by Rogers and Beveridge. Royal Asiatic Society, London, 1909, Vol. I, p. 384.

<sup>8</sup> *Ibid.*, Vol. I, p. 202-3.

<sup>9</sup> *Ibid.*, Vol. I, p. 290.

<sup>10</sup> The figures, including Shah Jahan himself, in a Bundi painting of about 1635 wear a sash patterned by a growing plant at the hanging end in a painting showing the Mughal Emperor Shah Jahan attended by Rao Chhattar Sal (1631-59) of Bundi, in the collection of H. H. the Maharana of Udaipur. See: Archer, W. G., *Indian Painting in Bundi and Kotah*, Victoria and Albert Museum, London, 1959, Fig. 2.

MILTON SONDAY and NOBUKO KAJITANI have both received training in the Textile Museum. Mr. Sonday was formerly an Assistant Curator in charge of Rugs at the Textile Museum, and is now the Assistant Curator of Textiles at the Cooper-Hewitt Museum of Decorative Arts and Design, Smithsonian Institution, New York City. Miss Kajitani, having specialized in textile conservation, is presently Textile Restorer in the Metropolitan Museum of Art, New York City. This is the first of a series of collaborative articles dedicated to Miss Irene Emery to whose approach to the study of fabric structures the authors are deeply indebted.